MUNICIPAL PEST MANAGEMENT SERVICES, INC.

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Town of Fremont, New Hampshire
2006 Public Health Mosquito Control Program

A health- based mosquito control program is labor intensive. Most work is spent on the control of mosquito larvae (larviciding). Mosquito larvae are small worm- like creatures found in stagnant water habitats, i.e marshes, swamps, catch basins, flooded fields, roadside ditches, etc.

Like most New England towns, Fremont has red maple swamps, woodland pools and marshes. These wetlands support *Culiseta melanura*, the primary vector mosquito of Eastern Equine Encephalitis (EEE). Fremont has high risk areas: residential areas, an elementary school, parks, athletic fields and campgrounds. Spruce Swamp is one of the largest red maple swamps in New Hampshire and likely supports a large population of *melanura* larvae and flying mosquitos.

The primary vectors of West Nile Virus (WNV) are *Culex* mosquitoes found in river floodplains, street catch basins, roadside ditches, stormwater basins and rainwater pools.

Bridge vectors (mosquitoes transmitting virus from birds to humans) for WNV and EEE include cattail mosquitos, freshwater marsh mosquitos and a new species called *japonicus* found in stagnant waters of catch basins and discarded tires.

State Permit Application: Completed at no cost. The permit application requires information on mosquito breeding areas. Throughout the 2006 mosquito season, Municipal Pest Management Services, Inc. (MPMS) will map specific wetland habitats, i.e. red maple swamps and woodland pools and identify associated species. This baseline information will provide invaluable information for control activities and aid in wetland mapping.

Larviciding (30 week season)– control of mosquito larvae in stagnant waters by application of a bacterial insecticide

- April 1, 2006 to October 31, 2006 (30 weeks)
- The most important and effective means of mosquito control
- Corn particles with a bacterium called BTI will be the primary control agent for larviciding
- Collection and species identification of mosquito larvae
- Mapping of mosquito breeding areas
- Areas to be mapped and larvicided:
  Freshwater wetlands, especially red maple swamps and woodland pools in the spring
  Stormwater basins– primary vector species for WNV and bridge vector species of EEE (O. japonicus)
  Cattail marshes– bridge vectors of WNV and EEE
  Freshwater marshes– bridge vectors of WNV and EEE
  Stormwater basins– primary vectors of WNV
  Flooded fields– bridge vectors of WNV and EEE
  Roadside ditches– bridge vectors of WNV and EEE
- Estimated cost: $1,000 per week for thirty weeks (April through September)= $30,000

Adulticiding– truck spraying along town roads and facilities or residual spray applications for long term adult mosquito control around schools, parks and public areas.

Adulticiding is defined as spraying to control adult (winged) mosquitos. Adulticiding should be used in emergency situations when disease is present or imminent. A contingency fund of $2,000 can provide emergency adulticiding, should it be required.

Mosquito Population Monitoring and Disease Testing

- Estimated cost: $1,000 per week for 16 weeks=$16,000
- Larval surveys and mapping for melanura larvae in red maple swamps (April through October)
- Weekly adult mosquito trapping (June through September) and testing (WNV and EEE). MPMS tests for WNV. Mosquitoes are brought to the state lab in Concord for EEE testing.
- Essential for determining the onset and presence of disease in a community and for determining the proper timing of control applications
- Highly recommended by DHHS (State Health Agency)

Summary of Options:

State Permit Application- $0
Larviciding Program- $30,000.00
Adulticiding (if necessary)- $2,000.00
Mosquito collecting and testing for EEE and West Nile Virus- $16,000
Total: $48,000.00

Notes:

Fremont has a lot of swamp habitat for EEE mosquito breeding. I have identified eleven potential major sites for EEE mosquito breeding:

- Spruce Swamp (740 acres)
- Loon Pond Swamp (61 acres)
- Beede Hill Swamp (26 acres)
- Brown Brook Swamp (14 acres)
- Bean Road Swamps (22 acres)
- Red Brook Swamps (17 acres)
- Rockingham Recreation Trail/ Bonus Field Swamps (32 acres)
- Louise Lane Pond marsh (10 acres)
- Louise Lane Pond Swamp (6 acres)
- Chester Road (south) swamp and marsh (303 acres)
- Chester Road (north) Swamp (68 acres)

Many of the EEE mosquito breeding sites need to be controlled once per year in April or May. Larvae are typically found in particular areas and not throughout a swamp or marsh.

Mosquito population monitoring and testing will determine the status of WNV or EEE in town and allow for accurate and timely control applications.

Municipal Pest Management Services, Inc. is based in Portsmouth, NH. and has been completing community- based mosquito programs since 1979. A company CD is available as is a power point presentation.

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